

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>63283</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/053367</b>	International filing date ( <i>day/month/year</i> ) <b>09.12.2004</b>	Priority date ( <i>day/month/year</i> ) <b>19.12.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>G06F9/44</b>			
Applicant <b>THALES</b>			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <b>5</b> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/EP2004/053367

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
 
  - international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 

the international application as originally filed/furnished  
 the description:  
 pages 1-5 \_\_\_\_\_ as originally filed/furnished  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 the claims:  
 nos. 1-5 \_\_\_\_\_ as originally filed/furnished  
 nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 the drawings:  
 sheets 1/4-4/4 \_\_\_\_\_ as originally filed/furnished  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/EP2004/053367

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																									
<p>1. Statement</p> <table> <tr> <td>Novelty (N)</td> <td>Claims</td> <td>1–5</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> <tr> <td>Inventive step (IS)</td> <td>Claims</td> <td></td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td>1–5</td> <td>NO</td> </tr> <tr> <td>Industrial applicability (IA)</td> <td>Claims</td> <td>1–5</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> </table>			Novelty (N)	Claims	1–5	YES		Claims		NO	Inventive step (IS)	Claims		YES		Claims	1–5	NO	Industrial applicability (IA)	Claims	1–5	YES		Claims		NO
Novelty (N)	Claims	1–5	YES																							
	Claims		NO																							
Inventive step (IS)	Claims		YES																							
	Claims	1–5	NO																							
Industrial applicability (IA)	Claims	1–5	YES																							
	Claims		NO																							
<p>2. Citations and explanations (Rule 70.7)</p> <p><b>1. Documents</b></p> <p>Reference is made to the following document:</p> <p>D1: CAMPBELL L A ET AL: "Automatically detecting and visualising errors in UML diagrams" REQUIR. ENG. (UK), REQUIREMENTS ENGINEERING, 2002, SPRINGER-VERLAG, UK, vol. 7, no. 4, 2002, pages 264–287, XP002289750 ISSN: 0947–3602</p> <p><b>2. Objections with regard to PCT Article 33(3)</b></p> <p>2.1 D1, which is considered to be the prior art closest to the subject matter of claim 1, describes (the references between parentheses apply to said document):</p> <p>a method for verifying rules on UML models, characterised in that, having first established a model (page 266, left-hand column, lines 5 to 6), the data of the model are structured so as to render them processable by a verification tool (page 266, left-hand column, lines 25 to 28; page 268, section 2.3.1 <i>Modelling and Analysis Process</i>, lines 9 to 14: the data are exported in the <i>Promela</i> format to the <i>SPIN</i> tool), said tool is used to generate a verification file (page 269, section 3.2.1 <i>Visualisation</i>, lines 11 and 12):</p>																										

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International application No.  
PCT/EP2004/053367**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

"trace data output") and a verification report that can be read by a user is produced from said file (page 269, section 3.2.1. *Visualisation*, lines 16 to 18: "MINERVA can also reformat the analysis results into a human-readable report...").

- 2.2 Consequently, the subject matter of claim 1 **differs** from this known method in that the verification tool is the tool "Model In Action" (MIA).
- 2.3 The use of this tool is considered to be merely one of several obvious options that a person skilled in the art seeking to solve the stated problem might select, depending on each particular case, particularly in view of the fact that D1 indicates that any of the existing verification tools can be used (page 265, section 2.1. *Formalisation Framework Overview*, lines 24 to 27).
- 2.4 Dependent claims 2 to 5 contain no feature which, when combined with the features of any one of the claims to which they refer, defines subject matter that complies with the PCT requirements of inventive step, for the following reasons:
- 2.5 With regard to claim 2:
- (a) rules relating to correct modelling are described in D1 (page 266, section 2.2.2 *Model Checking*).
- (b) rules relating to:  
the code generator;  
the consistency of the model;  
the consistency of the code;

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PCT/EP2004/053367**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

the design measurements;

the measurements of modelling progress;

the quality of the model

form part of the known rules in model analysis. A person skilled in the art would add these rules according to the aim of the analysis, without an inventive step being involved.

- 2.6 With regard to claim 3, the XMI format is a standardised format for ensuring that UML tools are mutually operable and one that a person skilled in the art would use for exchanging data between the various tools, without an inventive step being involved.
- 2.7 With regard to claims 4 and 5, XML (claim 4) and XLST (claim 5) formats are standardised formats routinely used for exchanging and transforming data. The use thereof does not involve an inventive step either.